

## REMARKS

Claims 1-20 remain pending in this application. Claims 1-4, 7-11 and 14-20 stand rejected under 35 USC §103(a) as being unpatentable over Bonsor in view of Altschul et al. and Mraz. Claims 5 and 12 stand rejected under 35 USC §103(a) as being unpatentable over Bonsor in view of Altschul et al., Mraz and Woo. Claims 6 and 13 stand rejected under 35 USC §103(a) as being unpatentable over Bonsor in view of Altschul et al., Mraz and Kawakami et al.

In view of the preceding amendments and the following remarks, these rejections are traversed, and reconsideration of this application is respectfully requested.

The specification has been amended above to change reference numeral "30" to "32" to be consistent with the drawings.

Applicant's invention is a disposable telephone that is made entirely, or almost entirely, out of paper products and conductive ink. In one embodiment, the telephone has particular application as a business card, where the holder of the business card can activate a switch that automatically calls the person or company identified on the business card. The telephone includes a paper substrate on and in which the various elements that make up the telephone are formed. Applicant submits that the disposable telephone business card claimed by Applicant is a more advanced disposable telephone than those taught or fairly suggested by the prior art of record.

Independent claim 1 has been amended above to make it more clear that the switch, the input diaphragm and the output diaphragm are all formed in the paper substrate. Independent claims 10 and 17 state that the diaphragms are paper diaphragms attached to the paper substrate, and vibrate relative thereto. Also,

independent claim 10 is specifically a business card telephone including all of a paper substrate, paper diaphragms and a paper battery. Applicant submits that the prior art of record does not fairly teach or suggest such a business card telephone.

The article, "How Disposable Cell Phones Will Work" by Bonsor, discloses a disposable cell phone that includes paper substrate layers on which conductive ink is printed to form the telephone circuitry. Applicant identified this article, published June 21, 2001, in his Information Disclosure Statement, and reserves the right to swear behind this reference in the event a Final Office Action is mailed. Metallic ink making up the circuitry is printed on paper substrate layers, as shown in figure 1 of Bonsor. However, the similarities between the Bonsor disposable phone and Applicant's invention appear to end there. Bonsor identifies non-printed components that are added to and over the substrate layers. These components include thin crystals, which presumably make up the input and output diaphragms, and other surface components, such as the keypad and other switches. The battery is not included in the initial production process, but is later added by slipping a battery housing over the end of the body forming the phone. Thus, in the Bonsor telephone, the diaphragms are not made of paper, the diaphragms are not formed in a paper substrate, the battery is not formed in the paper substrate and no switches are formed in the paper substrate.

The article "Thin, Flexible Battery Needs to Case" by Steven Mraz, published March 1, 2001, discloses a battery or power paper cell that can be fabricated by printing, pasting or laminating onto a paper substrate. Applicant stated that such batteries exist in the first full paragraph on page 5 of the specification. Applicant also reserves the right to swear behind this reference if a Final Office Action is mailed. Mraz discloses a few uses for the power paper cell, specifically single-use medical

devices, smart card and tags, and multi-media enhancements for entertainment devices, such as greeting cards. No mention is made by Mraz of using the battery in a disposable paper telephone or forming it in a paper substrate. Also, Mraz does not teach or suggest a switch formed in a paper substrate for sending a telephone call, or paper diaphragms formed in a paper substrate that vibrate relative thereto.

U.S. Patent No. 5,875,393 issued to Altschul et al. discloses a disposable wireless telephone. Figures 10-16 show one embodiment of the Altschul et al. telephone that the Examiner appears to be relying on. This embodiment includes an integrated body 112 that is not a paper substrate, but is a plurality of laminated circuit board layers 154 defining a core 150, as shown in figure 14. An earphone assembly 120 and a microphone assembly 122 include an assembly of metal parts that are clipped to the core 150 by metal mechanical clipping devices 174 and 184. The power switches 146 and 148 are not switches that are formed in a paper substrate, as claimed by Applicant.

Applicant respectfully submits that Altschul et al. does not disclose, teach or suggest anything that would make Applicant's independent claims obvious. Altschul et al. does not teach or suggest any of a paper substrate including conductive ink formed thereon, a paper battery formed in a paper substrate, a switch formed in a paper substrate, input and output diaphragms formed in a paper substrate, or paper diaphragms formed in a paper substrate that vibrate relative thereto. The various elements identified on page 3 of the Office Action that the Examiner says are disclosed by Altschul et al. are elements that are in every telephone. But, none of these Altschul et al. elements have anything to do with paper elements. Therefore, Applicant respectfully submits that Altschul et al. cannot provide the teachings missing from Bonsor and Mraz to make Applicant's claimed invention obvious.

The Examiner has stated on page 11 of the Office Action that Applicant admits that paper speaker technology can be miniaturized for the input and output diaphragms. Applicant has admitted that paper speaker technology is known in the art. Applicant has not admitted that paper speaker technology has been taught or suggested in the prior art for a paper cell phone, such as a business card cell phone. Applicant has also not admitted that the paper speaker technology can be used in combination with a paper substrate including conductive ink, or that the paper speaker technology can be used in combination with a paper battery. Therefore, Applicant's admission concerning paper speaker technology does not make Applicant's invention as claimed obvious.

U.S. Patent No. 6,317,086 issued to Woo discloses an antenna for a wireless apparatus. Woo does not teach or suggest any of a paper substrate, paper battery, paper diaphragms, etc., as discussed above. Therefore, Woo cannot provide the teaching missing from Bonsor and Mraz to make Applicant's claimed invention obvious.

U.S. Patent No. 5,933,783 issued to Kawakami et al. teaches a portable terminal that does not include any of a paper substrate, paper battery, and/or paper diaphragms, and therefore also fails to provide the teaching missing from Bonsor and Mraz to make Applicant's claimed invention obvious.

In view of the preceding amendments and remarks, it is respectfully requested that the Section 103(a) rejections be withdrawn.

It is now believed that this application is in condition for allowance. If the Examiner believes that personal contact with Applicant's representative would expedite prosecution of this application, the Examiner is invited to call the undersigned at his convenience.

Respectfully submitted,

IP ADMINISTRATION  
LEGAL ADMINISTRATION, M/S 35  
HEWLETT PACKARD COMPANY  
P.O. BOX 272400  
FORT COLLINS, CO 80527-2400

Dated: 3/31/04

By: John A. Miller  
John A. Miller, Reg. No. 34985  
(248) 364-4300